

Notice of Allowability

Application No.

09/879,979

Examiner

Cynthia Britt

Applicant(s)

CHIEN ET AL.

Art Unit

2133

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/14/04.
2. ☒ The allowed claim(s) is/are 1, 3 and 4.
3. ☒ The drawings filed on 14 June 2004 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.


Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 11/1/04.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


Guy J. LAMARRE
PRIMARY EXAMINER

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Benjamin Urcia on November 1, 2004. The application has been amended as follows:

In claim 1, line 2; "an electronic machine" should be changed to "a host electronic machine".

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance:

The present invention pertains to a device for prolonging lifetime of nonvolatile memory. The claimed invention (claim 1 as the only independent claim) recites features such as "...the RAM buffer zone is connected with the counter and the inverter and employed for temporary storage of a unit data train and a corresponding state flag when a host electronic machine is to read/write from or to the nonvolatile memory unit, wherein the state flag determines whether the unit data train is to be inverted by the inverters; the counter connected with the host electronic machine and the RAM buffer zone is in charge of counting total bits of logic "0" in the unit data train and judging whether the counted result outnumbered a default proportion or not; wherein if a counted result outnumbered a default proportion, the state flag corresponding to the unit data train

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is turned into "0", otherwise, the state flag corresponding to the unit data train is turned into "1"; and the inverters are arranged to check the corresponding state flag of the unit data train and invert the unit data train if the state flag: has been turned into "0"; whereby the electronic machine will write fewer bits of logic '0' to prolong the lifetime of the nonvolatile memory unit."

The prior arts of record (Arase et al. U.S. Patent No. 5,561,632) teach a system that replaces word lines that have been used for a predetermined number of cycles with redundant or backup word lines. While the prior art does check the number of ones and zeros, it does so in order to establish the number of cycles at which time the word line should be replaced. This is not the same as inverting the data to be written whenever the number of zeros exceeds the number of ones so as to reduce the number of zeros written into the memory. The prior art does not attempt to reduce the number of zeros written into memory, but merely counts them in order to determine when a corresponding word line should be replaced. As such, modification of the prior art of record can only be motivated by hindsight reasoning, or by changing the intended use and function of the prior art. Therefore, it is not clear that one of ordinary skill in the art at the time of the invention would have made the necessary modifications to the prior art of record to encompass the limitations set forth in the present application. Moreover, none of the prior arts of record, taken either alone or in combination, anticipate nor render obvious the claimed invention. Hence, claims 1,3, and 4 are allowable over the prior arts of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia Britt whose telephone number is 571-272-3815. The examiner can normally be reached on Monday - Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on 571-272-3819. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cb
Cynthia Britt
Examiner
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Guy J. LAMARRE
PRIMARY EXAMINER